ENVIRONMENTAL ASSURANCE

Environmental Partnerships and Education Branch

Alberta's Municipal Waste Action Plan

2004 - 2006

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INTRODUCTION

Waste is an indicator of the health of our economy- the more affluent our society becomes, the more waste we generate. How we manage our waste is an indicator of the success of our society.

Waste disposal creates the potential for odour, noise, leachate, methane gas, road traffic and competition for land use/habitat. As population and competition for land use increase, it becomes more and more difficult and costly to locate and properly construct new waste disposal sites. Increasing the number and size of landfills is therefore not a long-term option for waste management.

Pollution prevention strategies and better waste management practices can reduce the volume of waste directed to landfills. In addition to saving resources, less waste in landfills means less potential to produce methane gas, which has a tangible role in addressing climate change issues, and less leachate to potentially contaminate soil and water.

Through the Canadian Council of Ministers of the Environment (CCME), Alberta established a goal in 1989 to reduce municipal solid waste disposed of in landfills by 50 per cent of 1988 levels by the year 2000. At that time, Alberta disposed of approximately 2.5 million tonnes per year of municipal solid waste (MSW) in landfills throughout the province. Alberta Environment (AENV) introduced the Action on Waste Program in 1991, and waste reduction efforts by the government, municipalities, industry and public resulted in a 28 per cent reduction in waste sent to landfills below 1988 levels by the year 2000.

Despite initiatives to encourage waste reduction and recycling, per capita waste production has remained relatively constant, largely due to the level of economic activity throughout the province. Over two million tonnes, (750 kilograms per person) of waste is still being sent to landfills every year (Figure 1). This is exclusive of industrial wastes destined for on-site or private disposal facilities, agricultural wastes and a significant portion of industrial, commercial and institutional (ICI) waste (See Appendix 1 – Definition of Municipal Solid Waste). With a prosperous economy, pressures on landfills are certain to continue.

The Waste Management Stakeholder Group, and Alberta's Municipal Waste Action Plan

Alberta Environment (AENV) is developing a long-term approach to managing municipal, industrial and hazardous waste in the province. It is intended to consolidate issues and initiatives related to these waste types. Consultation is a major component of both the development and subsequent implementation of any new waste policy. Consultation on waste management will be achieved through the Waste Management Stakeholder Group (WMSG). The WMSG is comprised of associations interested in waste management issues who are active in Alberta. This Group will serve as:

- a communication network to ensure that waste management organizations are aware of waste management initiatives in the province; and

- a steering committee to provide guidance to Alberta Environment regarding key strategic directions and policy issues related to waste management.

For each issue that Alberta Environment requires consultation on, the WMSG will be presented with a discussion document, prepared by Alberta Environment, outlining the issue. Recommendations prepared by the WMSG will be consolidated into a document for public review in 2006. The ultimate objective is to re-write provincial waste regulations in 2007.

Alberta's Municipal Waste Action Plan preceded the establishment of this group and is the first component to be developed through stakeholder consultation and released. AENV has established a waste reduction target for Alberta: to reduce municipal solid waste disposed of at landfills to 500 kg per person by 2010. The Municipal Waste Action Plan details specific actions Alberta Environment will undertake in partnership with municipalities and other stakeholders to reduce the quantity of waste deposited in Alberta landfills. Additional action plans will be developed to address outcomes and performance measures for other aspects of waste management identified through the WMSG discussions.

Figure 1

Source: Alberta Environment - Municipal Solid Waste Disposal Survey.

ALBERTA'S ACHIEVEMENTS IN REDUCING MUNICIPAL SOLID WASTE TO LANDFILLS

Alberta has achieved significant results in improving waste management over the last quarter century. As early as 1972 with the introduction of the *Beverage Container Act* aimed at litter control, waste management programs were being initiated. By the mid-seventies, grant programs supporting waste facility development and recycling were offered. After the 50 per cent reduction in municipal solid waste by the year 2000 goal was adopted, a number of new programs were developed under the "Action on Waste" banner. These programs, described below, have all contributed to a higher quality environment and the conservation of resources.

Waste Management Infrastructure

AENV introduced the Waste Management Assistance Program (WMAP) in 1975/1976. The original intent of the WMAP was to replace hundreds of unsafe open dumpsites with higher standard Class II landfills (See Appendix 2 – Classification of Landfills) and transfer stations to consolidate landfill needs regionally. Since the establishment of the WMAP, 51 Regional Waste Management Commissions or Authorities have been created, and over 350 open dumps and modified landfill sites have been closed or are committed to close. Total investment in the WMAP, to date, is $70 million. However, there are currently demands for more funding to complete the task of replacing dumpsites, to expand existing systems or facilities, upgrade sites to meet changing environmental standards and to fund other necessary landfill modifications.

Municipal Recycling Programs

The Resource Recovery Grant Program (RRGP) was initiated in 1976 to provide start-up capital assistance to municipalities and non-profit organizations to fund waste minimization projects such as recycling facilities. Since 1976, the RRGP has invested over $9.5 million towards recycling projects and other key initiatives (e.g. research and educational programs at Olds College Composting Technology Centre and technical support to Northern Coordinated Action for Recycling Enterprises) in over 200 communities. There is now increasing pressure to fund upgrading of facilities or equipment and a composting infrastructure.

Composting of Organics

Organics (excluding paper, cardboard and wood) comprises approximately 30 per cent of the waste stream in Alberta. A number of composting initiatives have helped manage this waste stream.

- There are at least 69 composting facilities in municipalities across the province (up from three in 1993) and many have benefited from technical support provided through resources and programs offered by AENV and its partners.

- AENV, in conjunction with Olds College, distributes technical reports on *Midscale Composting* and *Leaf and Yard Waste Composting* and the government has funded the Olds College Compost Technology Centre to provide information, technical and research services to municipalities and industry. The college also offers educational curriculum to aspiring compost operators.

- The City of Edmonton Co-composter, designed with state-of-art technology to help convert municipal solid waste and biosolids into compost, is a major achievement in the management of a significant organic waste stream.

- AENV promotes backyard composting through the distribution of pamphlets and through the *Teacher's Guide to Composting*, which is now used across Canada.

- The City of Edmonton offers a Master Composter course, which has increased public access to expertise in the Edmonton area. Over the years backyard composters have been made available through programs in a variety of communities across Alberta.

- On the regulatory side, AENV is responsible for administering the *Code of Practice for Compost Facilities*, which is undergoing a regulatory review of standards and guidelines for composting operations. The department has been and will continue to be involved in the refinement of compost quality guidelines under CCME.

Municipal Waste Facility Operator Certification Guidelines for Landfill and Composting Operators

Under the Waste Control Regulation waste management facilities are required to have certified operators. AENV administers the *Municipal Waste Facility Operator Certification Guidelines for Landfill and Composting Operators*. A municipal solid waste facility operator must meet specific education and experience requirements in order to become certified and properly and effectively operate and manage municipal waste management facilities.

Household Hazardous Waste (HHW) Program

Household hazardous wastes consist of solid or liquid materials, or containers holding gases, which have outlived their usefulness. These wastes may harm humans or the environment unless given special handling and treatment in the way they are discarded. They may be flammable, corrosive, explosive or toxic. Because of these dangerous characteristics, they should not be disposed of in landfills or sewage systems. The Household Hazardous Waste Program funds the transportation, treatment and disposal of household hazardous waste. Participating communities cover the costs of hosting roundups to collect HHW materials. Material is collected at events in 114 communities across Alberta. Permanent year round facilities for collection of HHW are located in Edmonton, Calgary, Red Deer, Grande Prairie, Jasper, Lethbridge and Medicine Hat. Several regional landfills also offer year round drop-off facilities.

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In 2002/2003 the HHW program collected and treated over one million litres of household hazardous waste (Figure 2) and over 139,000 aerosol cans. Approximately 65 to 75 per cent of this material is paint. The cost of paint treatment represented 45 per cent of the total HHW treatment cost for 2002/2003. Since the program started in 1988, over nine million litres of HHW material has been diverted from landfills. The program will be reviewed to establish the most effective means of meeting growing municipal demands.

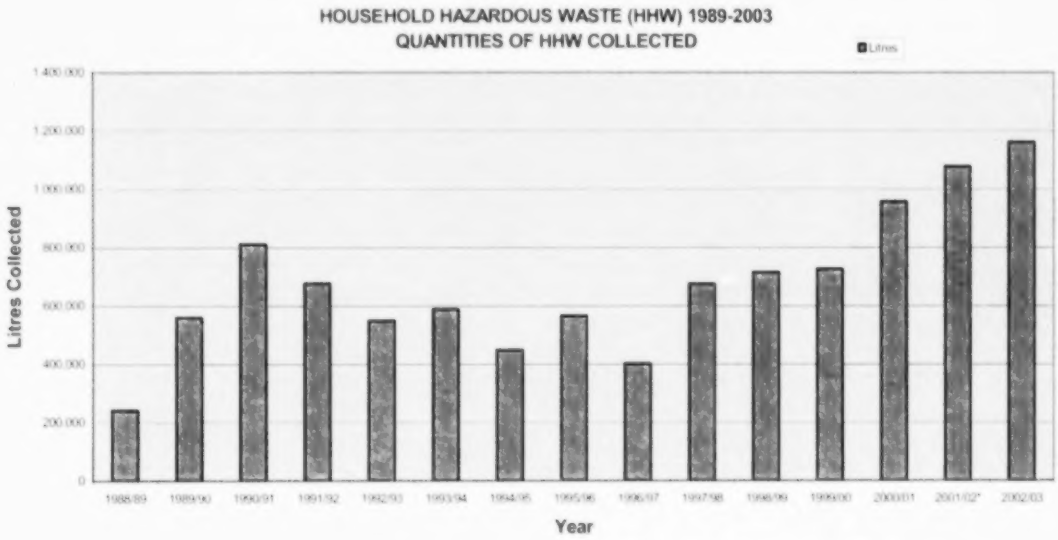

Figure 2

Stewardship Programs

Regulated recycling programs have been developed for used oil products (oil, filters and containers), tires and beverage containers. Alberta's *Environmental Protection and Enhancement Act* provided for the establishment of Delegated Administrative Organizations (DAOs) to manage these programs. Achievements of these programs include:

- In 2003/2004 the Alberta Used Oil Management Association (AUOMA) collected over 71 million litres of oil (a recovery rate of 75 per cent); 6.2 million used oil filters (82 per cent recovery rate); and more than 1.3 million kg of used oil containers (51 per cent recovery rate);
- To date, the Tire Recycling Management Association of Alberta (TRMA) has recycled over 30 million tires (Albertans generate about 2.5 million waste tires annually); and

- In 2003 close to 1.3 billion beverage containers were recovered for reuse or recycling through the deposit/refund system managed by the Beverage Container Management Board (BCMB).

Following the creation of the DAOs, an *Accountability Framework for Delegated Administrative Organizations* was developed and implemented to ensure that organizations delivering programs on behalf of the government met performance expectations. Environment Canada has incorporated most of the workbook in a manual developed to guide stewardship organizations across Canada.

Several voluntary industry stewardship programs have been developed in Alberta with varying levels of success. These include programs for the collection of pesticide containers (74 per cent recovery rate), telephone directories (54 per cent recovery rate), unused drugs (48 tonnes in 2002), obsolete pesticide collection (over 100,000 kg in 2002/2003) and a program operated nationally by the Rechargeable Battery Recycling Corporation.

The Alberta Dairy Council, through a Memorandum of Understanding with AENV, set up a milk container recycling program that pays municipalities for collecting milk containers. Municipalities are paid from a Milk Container Recovery Fund, which is funded through fees paid by consumers (two cents for each four-litre jug and one cent for one or two litre containers). The program achieved a 48 per cent recovery rate in its fourth year of operation. A target of 75 per cent has been established for July 2007.

Industrial, Commercial & Institutional (ICI) and Municipalities, Universities, Schools & Hospitals (MUSH) Sectors

The ICI sector represents up to 40 per cent of the waste stream and is largely outside the direct control of municipalities. In larger communities this waste is often managed through contractual agreements between the businesses and private waste management companies. Because there is such a broad spectrum of business and institutions involved, reducing waste in the ICI sector has proven to be challenging. Past strategies have focused on education and awareness. In the early 1990s, AENV produced manuals and fact sheets for a wide range of businesses. These were distributed to provincial associations and promoted at trade shows and conferences. They are also available on the AENV waste website at www.gov.ab.ca/env/waste. Future activity will include expanding awareness and education opportunities and looking at the feasibility of landfill prohibitions for materials such as cardboard.

Fluorescent Bulbs and Computers

Each year, an estimated six million fluorescent bulbs are disposed of in landfills, contributing 87.5 kg of mercury to the waste stream. The mercury from one fluorescent tube (approximately 23 mg) can contaminate 30,000 litres of water above safe drinking levels. There has also been significant growth in disposal of computer equipment and this trend is expected to continue. A typical computer contains 1.7 kg of lead. Voluntary programs for collecting and recycling fluorescent bulbs and computers were initiated in 2001. AENV funded the public awareness and communication components of these programs, which focused first on the MUSH sector, then on the ICI sector. Future activity relating to managing electronic waste will focus on implementing a provincial electronics stewardship program.

Construction, Renovation and Demolition Waste

Construction, Renovation and Demolition (CRD) waste represents about 27 per cent of the waste stream in Alberta. The CRD Waste Reduction Advisory Committee was set up by AENV in September 1999. The committee is comprised of representatives from the construction industry, trade associations, specifications writers, private recyclers, University of Calgary, waste management facility operators and municipalities. The committee created a strategic plan focusing on the development of information materials and industry awareness. A comprehensive CRD website containing reports, case studies, links to how-to manuals and specifications information is available as a link from the www.gov.ab.ca/env/waste website. Future work will focus on market development for recycled materials.

Public Awareness and Education

AENV established the Recycle Info Line (1-800-463-6326) in 1993. It has fielded more than 88,000 calls from the public since its inception (650-700 calls per month). Information pieces including brochures, fact sheets and manuals have been developed for municipalities, industry and the public to assist in the planning, costing and implementation of waste reduction programs. Curriculum-specific materials on waste management and reduction were developed for Grade 4 students and are being updated.

A NEW DIRECTION

It is time to reassess the overall strategies for waste management in Alberta in order to achieve the target of reducing the amount of municipal solid waste going to landfills to 500 kg per person by the year 2010. Approaches to date have relied primarily on the voluntary actions of industry, municipalities and organizations. While this strategy has led to some waste reduction and diversion from landfills, further improvements are unlikely without more progressive actions such as landfill prohibitions. AENV, in consultation with stakeholders, needs to look at all the tools and initiatives available in the context of a long-term waste management plan.

Waste Management Hierarchy

MOST DESIRABLE

Waste Minimization/reduction
Reduction in the generation of waste through pollution prevention and the more effective use of natural resources is often the most cost-effective waste management option in the long-term.

Re-use
This involves items being used again for the same or different purposes with the objective of long-term cost savings.

Recycling and Recovery
Value should be recovered through recycling, composting or energy recovery as an alternative to waste disposal.

Disposal
This should only be an option if none of the other options are appropriate. This will be the case for some waste streams.

Waste management practices, in Alberta, currently favour the lower end of the waste hierarchy because:

- The potential environmental and human health costs of producing, treating and disposing of wastes are not necessarily reflected in waste disposal fees; and
- Innovative, cost-effective waste management options tend to be developed only when waste disposal options become more limited.

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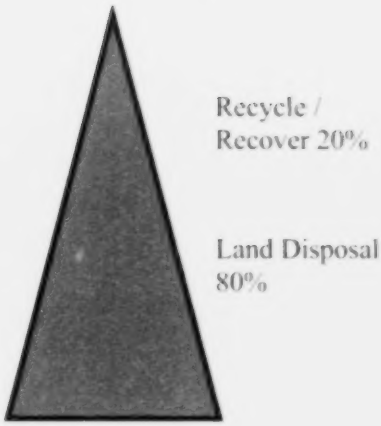
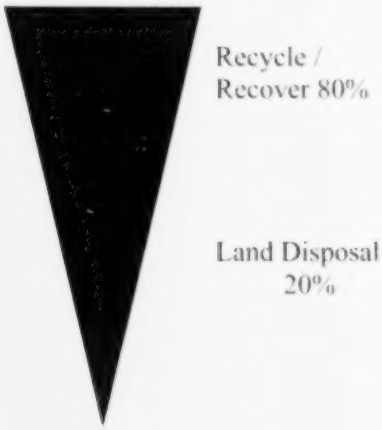
Our challenge is to work towards reversing the current waste hierarchy.

CURRENT
Waste Hierarchy Profile



DESIRED
Waste Hierarchy Profile



The Municipal Waste Action Plan 2004-2006 is built on past successes and has benefited from the review and input of stakeholders. It takes an aggressive approach to managing our wastes and proposes new initiatives for problem waste streams. Implementing the Municipal Waste Action Plan 2004-2006 will be a positive step toward reducing Alberta's waste to 500 kg per person by 2010.

TARGET

To reduce the amount of municipal solid waste disposed of in landfills each year to 500 kilograms per person by 2010.

HOW WILL THIS BE ACHIEVED?

Albertans, in cooperation with provincial and municipal governments, will take personal and corporate responsibility in actively promoting pollution prevention, responsibly managing waste resources and properly disposing of residual waste.

GOALS

1. Leadership

The responsibility for operating municipal waste management systems lies at the municipal level of government, while the province's role is to provide an overall framework, province-wide programs, funding and regulatory support and bridging to national activities. AENV will continue to serve as a coordinating body and facilitator for waste management activities and issues affecting the province.

There has been demonstrated leadership from a number of regional-scale organizations who share resources, ideas and technologies, including the Northern Coordinated Action for Recycling Enterprises (Northern CARE), Capital Region Waste Minimization Committee and the Calgary and Region Waste Reduction Partnership. This has improved overall efficiency in developing waste management facilities and waste reduction policies and practices across the province. Strengthening these alliances and consistently applying regional approaches will continue to be integral to waste management and reduction operations in the province.

GOAL 1:	**Strengthen Alberta's policy and legislative framework, in consultation with stakeholders, that will strengthen and shape pollution prevention and waste management and diversion systems to 2010.**

Actions

- Demonstrate government leadership in sustainable development practices by strengthening and ensuring consistency in government waste reduction and procurement policies.
- Implement a Waste Management Stakeholder Group to review waste management policies and directions – for government and the province.
- Strengthen and complete composting initiatives:
    - Support the work of the Compost Legislation Advisory Committee;
    - Conduct a needs assessment in 2004 to determine where future resources to support management of organics will be placed;
    - Participate in the review by CCME of the national compost quality guidelines; and
    - Review technical standards for composting operations.
- Identify barriers and opportunities to improve regional waste reduction programs and coordinate new or enhanced initiatives on a provincial level.
    - Support a study to examine transportation issues and solutions related to the recovery of waste resources in Alberta.

- Use progressive approaches, such as targeted incentives and disincentives to reduce waste and increase resource recovery:
    - Investigate landfill prohibitions and alternatives for aggressively targeting selected material streams with high recovery potential (cardboard, drywall, organics and fluorescent tubes); and
    - Promote the use of economic instruments to divert materials from landfill (e.g. user pay).
- Develop guidance documents for municipal/regional waste management authorities to assist in the preparation of integrated waste management plans.
- Review landfill standards and guidelines to ensure high standards for disposal of residual materials.
- Continue to deliver the Waste Management Assistance Program and the Resource Recovery Grant Program to municipalities to complete the waste management infrastructure in the province.
- Enhance the AENV database for waste management and recycling to increase general access to information regarding Class I, II and III landfills, recycling facilities and compost operations.
- Track/measure municipal waste diversion and disposal by use of mandatory reporting requirements (hazardous waste reporting system already developed):
    - Co-host a national workshop on measurement options and issues;
    - Implement a measurement protocol;
    - Establish baseline data for priority waste streams (ICI, organics and CRD); and
    - Set targets for priority waste streams.

2. Public Awareness and Education

Awareness and education are considered an integral and crucial part of program development and delivery. Communicating roles, responsibilities and "how to's" to municipalities, industry and the public are necessary to promote the adoption of new values and changes in behaviour. Cooperation with existing non-government associations, Delegated Administrative Organizations, municipalities, industry and institutions is key and Alberta Environment will seek partnership opportunities in carrying out awareness and education activities.

GOAL 2: Increase awareness and understanding of waste management and pollution prevention issues and solutions.

Actions

- Conduct a workshop with partners to develop and implement an education and outreach strategy for waste issues and programs.
- Publish case studies of successful pollution prevention and waste reduction projects on the AENV website.

- Participate in Waste Reduction Week, Environment Week and Composting Awareness Week.
- Update existing educational materials.
- Work with partners to develop and deliver a Waste Education Institute for teachers.
- Prepare annual progress reports on waste management and reduction.
- Develop and deliver Recycling 101 for the ICI sector in partnership with stakeholders.
- Enhance Recycle Info Line program delivery.
- Promote the use of waste management decision-making tools by municipalities for assessing options for waste management and recycling systems design.
- Survey the public and industry to establish their level of awareness about waste issues and solutions.
- Work with partner organizations such as Solid Waste Association of North America (SWANA), Recycling Council of Alberta (RCA), Regional Waste Management Commissions and Regional Offices to provide information to municipalities on topics such as:
    - Full cost analysis for integrated waste management systems;
    - Promoting user pay initiatives (e.g. Tag-a-bag);
    - Community recycling and waste reduction programming;
    - Composting/waste operator training; and
    - Closing the loop and buying recycled products.

3. Innovation

Waste reduction and recycling is a growing industry and there are many opportunities for innovative ways to reduce waste, manage waste resource materials and dispose or treat residual waste. The role of the provincial government is to remove the obstacles to innovation and encourage resourceful solutions to challenges in areas such as market development and recycling systems development. AENV can facilitate the transfer of information and technology among industry and municipal players and can help find common ground on which to build constructive business relationships. Developing new or enhanced partnerships with research organizations, centres of excellence and learning institutions to identify new opportunities for product development, recycling technologies and addressing priority issues is a key strategy for achieving success in this area.

GOAL 3: Promote leadership in innovative research and development to further pollution prevention and waste reduction goals.

Actions

- Ensure that new regulated waste reduction and recycling programs include a research and innovation component.
- Support eco-industrial parks that achieve resource recovery and an exchange of waste resources (e.g. Calgary Foothills Industrial Park).
- Examine the feasibility of establishing a web-based provincial waste exchange.

4. Stewardship

Stewardship refers to a wide range of actions and activities of individuals, communities, organizations and businesses -- acting alone or in partnership -- in the proactive management of our environment. These actions can be voluntary or be supported by regulation. The current trend in many waste sectors is to attribute more responsibility for the management of the waste resource to the manufacturers, "brand owners" or first importers of the products. The application of stewardship principles for waste reduction solutions will be actively pursued.

GOAL 4: Establish and enhance stewardship programs for priority waste streams.

Actions

- Develop stewardship programs for high priority materials (e.g., electronics, paint) and harmonize nationally or regionally where feasible:
    - Evaluate existing recycling systems for expanding the collection of materials and delivery of programs;
    - Develop a method of identifying new priority materials for recovery; and
    - Designate additional materials under the *Environmental Protection and Enhancement Act*.
- Expand the mandate of a Delegated Administrative Organization such as the Tire Recycling Management Association to manage a range of materials.
- Monitor the effectiveness of regulated and voluntary stewardship programs.

5. Household Hazardous Waste

GOAL 5: Continuous reduction of Household Hazardous Waste (HHW) disposed of in municipal landfills.

Actions

- Measure progress in reducing HHW disposed of in municipal landfills:
    - Complete a baseline study of HHW going to landfills; and
    - Set reduction targets.
- Review the efficiency, effectiveness and future direction of the Household Hazardous Waste program:
    - Develop alternative options for recycling paint and paint containers (i.e. paint stewardship program).
- Initiate a Toxic Free campaign to ensure proper procurement and increase the safe disposal/recycling of the hazardous products.
- Develop guidelines for setting up permanent HHW collection facilities and promote these to higher population communities.

MUNICIPAL WASTE ACTION PLAN ACTIVITIES FOR 2004-2005

- Develop stewardship programs for high priority materials (e.g., electronics, paint) and harmonize nationally or regionally where feasible:
    - Evaluate existing recycling systems (bottle depots, eco-centres, municipal collection systems) for expanding the collection of materials and delivery of programs; and
    - Designate additional materials under the *Environmental Protection and Enhancement Act*.
- Expand the mandate of a Delegated Administrative Organization such as the Tire Recycling Management Association to manage a range of materials (electronics, paint).
- Demonstrate government leadership in sustainable development practices by strengthening policy on waste reduction and procurement – Complete a baseline study and seek agreement on a process for a cross-ministry initiative.
- Implement a Waste Management Stakeholder Group to review waste management policies and directions.
- Measure progress in reducing HHW disposed of in landfills:
    - Complete a baseline study of HHW going to landfill; and
    - Set reduction targets.
- Use progressive approaches such as targeted incentives and disincentives to reduce waste and increase resource recovery:
    - Investigate landfill prohibitions and alternatives for aggressively targeting selected material streams with high recovery potential (cardboard, drywall, organics and fluorescent tubes); and
    - Promote the use of economic instruments to divert materials from landfill (e.g. user pay).
- Continue to deliver the Waste Management Assistance Program and the Resource Recovery Grant Program to municipalities to complete the waste management infrastructure in the province.
- Strengthen and complete composting initiatives:
    - Support the work of compost committee in 2003;
    - Conduct a needs assessment in 2004 to determine where future resources to support management of organics will be placed;
    - Participate in the review by CCME of the national compost quality guidelines; and
    - Review technical standards for composting operations.
- Enhance the AENV database for waste management and recycling to increase general access to information regarding Class I, II and III landfills, recycling facilities and compost operations.
- Track/measure municipal waste diversion and disposal by use of mandatory reporting requirements (hazardous waste reporting system already developed):
    - Co-host a national workshop on measurement options and issues;
    - Implement a measurement protocol;
    - Establish baseline data for priority waste streams (ICI, organics and CRD); and
    - Set targets for priority waste streams.
- Identify barriers and opportunities to improve regional waste reduction programs and coordinate new or enhanced initiatives on a provincial level:
    - Support a study to examine transportation issues and solutions related to the recovery of waste resources in Alberta.

- Develop guidance documents for municipal/regional waste management authorities to assist in the preparation of integrated waste management plans.
- Review landfill standards and guidelines to ensure high standards for disposal of residual materials.
- Conduct a workshop with partners to develop and implement an education and outreach strategy for waste issues and programs.
- Publish case studies of successful pollution prevention and waste reduction projects on the website.
- Participate in Waste Reduction Week, Environment Week and Composting Awareness Week.
- Prepare Progress Reports on Waste Management and Reduction.
- Deliver waste reduction workshops.
- Ensure that new regulated waste reduction and recycling programs include a research and innovation component.
- Support eco-industrial parks that achieve resource recovery and exchange waste resources (e.g. Calgary Foothills Industrial Park).
- Monitor the effectiveness of regulated and voluntary stewardship programs.

REPORTING ON PROGRESS

Progress on the implementation of specific activities in the Municipal Waste Action Plan will be reported through Alberta Environment's web site.

APPENDIX 1. DEFINITION OF MUNICIPAL SOLID WASTE

Municipal Solid Waste (MSW) is defined in the Generally Accepted Principles (GAP) 2 MSW Manual, which describes a process for measuring waste consistently across Canada. It states:

"Municipal solid waste is any material for which the generator has no further use, and which is managed at waste disposal (Class II Landfill sites in Alberta), recycling or composting sites. This definition specifically excludes:

- Wastes that are associated with primary resource extraction or harvesting;
- Agricultural wastes;
- Mining wastes; conventional air pollutants;
- Liquid effluents discharged from processing or manufacturing sites;
- Nuclear wastes;
- Liquid and hazardous wastes (except for household hazardous waste);
- Auto hulks;
- Pathological wastes;
- Gaseous wastes; and
- Gravel and rocks."

The above definition includes waste from residential sources, as well as Industrial, Commercial, Institutional (ICI) and Construction, Renovation, Demolition (CRD) waste deposited in Class II landfills. Class III landfills will not be included in the definition of MSW until there is a tracking system in place to monitor these landfills.

APPENDIX 2. CLASSIFICATION OF LANDFILLS

Landfills, in Alberta, are generally classified by the waste they receive. The required design elements for landfill facilities are defined through the Waste Control Regulation and the *Code of Practice for Landfills*.

Class I Landfill:

- Accepts hazardous wastes for disposal within the limits as set out in the Waste Control Regulation.
- Constructed with two liners (one synthetic) a primary leachate collection and removal system and a leachate collection and removal system between the two liners.

Class II Landfill:

- May accept wastes for disposal not including hazardous wastes as set out in the Waste Control Regulation.

Class III Landfill

- May only accept inert wastes defined as:
  (a) a waste that is solid; and
  (b) a waste that, on disposal in a landfill, is not reasonably expected to undergo physical, chemical, or biological changes to such an extent as to produce substances that may cause an adverse affect, and includes, but is not limited to demolition debris, concrete, asphalt, glass, ceramic materials, scrap metal and dry timber or wood that has not been chemically treated, but does not include hazardous wastes.
- Designed to provide for containment of the waste disposed.